Waste Management of New Hampshire, Inc. Turnkey Recycling & Environmental Enterprise 30 Rochester Neck Road P.O. Box 7065 Gonic, NH 03839	]	**PROPOSED RACT ORDER** **ARD-01-001** **xxxxxx xx, 2004**

A. Introduction

This NOx RACT Order is issued by the New Hampshire Department of Environmental Services, Air Resources Division, to Waste Management of New Hampshire, Inc. pursuant to RSA 125-C.

B. Parties

1. The New Hampshire Department of Environmental Services, Air Resources Division ("DES"), is a duly constituted administrative agency of the State of New Hampshire having its principal offices at 6 Hazen Drive, Concord, NH 03302-0095, telephone number (603) 271-1370.

2. Waste Management of New Hampshire, Inc., ("WMNH") is a Connecticut corporation, having a mailing address of 30 Rochester Neck Road, P.O. Box 7065, Rochester, NH 03839.

C. Statements of Fact and Law

1. WMNH owns and operates the Turnkey Recycling and Environmental Enterprise (TREE) facility, which encompasses an area of approximately 1,216 acres of land located to the north and south of Rochester Neck Road in Rochester, New Hampshire.

2. TREE ("the Facility") is an integrated solid waste management facility, which is fully permitted to operate as such by DES.

3. Operations at the Facility currently include the maintenance of two (2) closed municipal solid waste landfills (MSWLFs) as well as the management of an active MSWLF, a Materials Recovery Facility (MRF), a leachate treatment plant and two (2) landfill gas-to-energy plants.

4. The active MSWLF is identified as the TLR-III Refuse Disposal Facility and is operated on land located at 90 Rochester Neck Road in Rochester, New Hampshire.

5. Effective May 20, 1994, DES adopted PART Env-A 1211 NITROGEN OXIDES (NOx).

6. WMNH filed a "Compliance Schedule and RACT Evaluation for NOx Emissions" dated September 19, 1994.

7. At the time of the "Compliance Schedule and RACT Evaluation for NOx Emissions" submission, WMNH only operated one flare (Flare No. 1), but had proposed to install an additional flare (Flare No. 2). WMNH installed Flare No. 2 in 1995.

8. WMNH reported to DES in its "Compliance Schedule and RACT Evaluation for NOx Emissions" that the estimated NOx emission rate for Flare No. 1 is 2.39 pounds per hour (lb/hr) and proposed an emission rate of 2.86 lb/hr for Flare No. 2. In 1997, WMNH altered the operation of the blower that is used to move landfill gas to Flare No. 1. This alteration increased the flow of landfill gas to Flare No. 1. By increasing gas flow to this flare, the heat input rating of Flare No. 1 increased from 38 million British Thermal Units per hour (MMBtu/hr) to 41.9 MMBtu/hr. As a result, the estimated NOx emission rate for Flare No. 1 increased to 2.86 lb/hr.

9. WMNH filed a permit application for two proposed candlestick flares dated May 29, 2001 and withdrew the permit application for the two candlestick flares on April 23, 2002.

10. WMNH filed a permit application for an enclosed, Ultra-Low Emission (ULE) flare dated June 15, 2000.

11. WMNH proposes to install the ULE flare to increase the landfill gas control capacity. The proposed flare will have a landfill gas control capacity of 3,900 standard cubic feet per minute (scfm) and a maximum heat input rating of 128.7 MMBtu/hr (3,900 scfm @ 550 BTU/scf).

12. The manufacturer's guaranteed NOx emission rate for the ULE flare is 0.025 lb/MMBtu at the proposed nominal operating temperature of 1600ºF. (The device is expected to operate at a temperature that ranges from 1500ºF to 1700ºF). A NOx emission rate of 2.9 lb/hr will result under these operating conditions.

13. WMNH proposed no controls and no physical or operational modifications to the open flares as RACT (Reasonably Available Control Technology) and it claimed that it was not possible to reduce NOx emissions from the open flares. WMNH stated that because the combustion occurs in the open, combustion staging is not possible. In addition, WMNH stated that because the flame temperature is relatively low, staging combustion was not likely to achieve any further reductions in NOx emissions.

14. WMNH contacted two leading flare vendors, John Zink Company and NOA, Inc. to research the feasibility of add-on NOx control technology. Neither vendor was aware of any installation where add-on NOx controls had been applied to either open or enclosed flares.

15. A search by WMNH of the US EPA Best Available Control Technology/Lowest Achievable Emission Rate (BACT/LAER) Information System database failed to reveal the use of add-on NOx control technology on flares to date.

16. WMNH proposes to use state of the art technology, the ULE flare, as RACT (Reasonably Available Control Technology) because the NOx emission rate is less than half that of traditional enclosed flares (typically 0.060 lb/MMBtu). This type of flare has the lowest NOx emissions of any commercially available landfill gas flare.

17. On April 23, 2002, WMNH submitted a permit application for a portable landfill gas-fired Flare No. 4.

18. WMNH proposed to install Flare No. 4 to control landfill gas migration and the resulting odors and to increase landfill gas control capacity. The proposed Flare No. 4 will have a landfill gas control

capacity of a maximum of 800 standard cubic feet per minute (scfm) and a maximum heat input rating of 26.4 MMBtu/hr (800 scfm @ 550 BTU/scf).

19. Based on EPA's AP-42 emission factors for industrial flares, Flare No. 4 will have a NOx emission rate of 0.068 lb/MMBtu. Assuming a maximum heat input rating of 26.4 MMBtu/hr, Flare No. 4 will have a NOx emission rate of 1.8 lb/hr.

20. On January 28, 2003, WMNH submitted a permit application for a portable landfill gas-fired Flare No. 5. WMNH submitted a revised permit application on April 29, 2003.

21. WMNH proposed to install Flare No. 5 as a back-up flare for additional control of landfill gas migration and emissions. The proposed Flare No. 5 will have a landfill gas control capacity of a maximum of 1200 standard cubic feet per minute (scfm) and a maximum heat input rating of 39.6 MMBtu/hr (1200 scfm @ 550 BTU/scf).

22. Based on EPA's AP-42 emission factors for industrial flares, Flare No. 5 will have a NOx emission rate of 0.068 lb/MMBtu. Assuming a maximum heat input rating of 39.6 MMBtu/hr, Flare No. 5 will have a NOx emission rate of 2.7 lb/hr.

23. To simplify the NOx RACT Order, DES is changing the NOx RACT Order to be a performance-based standard (lb/MMBtu) instead of an emission rate standard (lb/hr). All of the open flare emission rates are based on a performance-based rate of 0.068 lb/MMBtu, based on EPA's AP-42 emission factors. The enclosed flare performance-based rating of 0.025 lb/MMBtu is based on the manufacturer's guarantee.

D. Order

Based upon the above findings and determinations, DES hereby orders WMNH as follows:

1. Comply with a 0.068 lb NOx/MMBtu performance standard for each of the existing open flares—Flare Nos. 1, 2, 4, and 5—and for any future open flares.

2. Comply with a 0.025 lb NOx/MMBtu performance standard for the enclosed ULE flare—Flare No. 3.

3. Operate and maintain Flare Nos. 1, 2, 3, 4, and 5, and any future open flares according to manufacturer's specifications.

4. Maintain at the facility and make available for review by DES and/or EPA upon request a copy of the manufacturer's specifications for each of the flares.

5. Maintain records of any manufacturer-specified maintenance conducted on the flares.

6. Comply with the record keeping and reporting requirements of PART Env-A 900.

Please address any correspondence and communication in reference to this Order to:

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Robert R. Scott, Director
Department of Environmental Services
Air Resources Division

cc: Timothy Drew, PIP Office
David Conroy, US EPA
Town Selectmen

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